METAL TECHNOLOGY EDUCATION FOR SELF RELIANCE

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Abstract

Technical Education is considered as one of the basis for scientific, technological and economic growth of any nation. Metal workers are found in many categories in both the public and private industries and establishments as fabricators, fitters, panel beaters and blacksmiths. The paper examines the status of metalwork technology with a view to ascertaining whether or not achieving its desired objectives as is designed by NPE for producing self – reliant graduants. Analyses of technical education were taken, problems were identified, solutions, conclusion and recommendations were suggested. The paper further emphasized that any nation that aspires to make adequate use of her human and other resources in order to develop technologically must first of all develop her technical education.

Introduction

Technical Education which metalwork is aimed at introducing the relationship between individuals that are provided at this level are aimed at creating an awareness or orientation so that they can make better regarding their future occupation. Activities in such programmes are centered on their immediate environment and should include the home, the school and their understanding through experiences, (Aluwong: (2004).

The National Policy on Education NPE (2004) emphasized the production of teachers with the intellectual and professional skills adequate for carrying out their primary assignments, and to make them adaptable to any changing situation not only in the life of their country but also in the whole world. The broad objective of teaching metalwork technology education as enshrined in the National Policy on Education is highly appreciated. Among which are acquisition of appropriate skills and development of mental, physical and practical skills abilities and competencies as equipment for the individual to live in and contribute to the development of the society.

The metalwork teacher is the manager for the learning resources, creating enabling learning environment in his class with a view to achieving technical objectives (Abdulhamid II).

According to him a metalwork teacher can do this by careful selection of his teaching and learning strategies, sequencing and structuring of his subject matter so that the learner can readily grasp it.

According to Allison (1982). The teacher is a guide. This suggests that every teacher that teaches metalwork must clearly understand that teaching of the subject is not just away of imparting information but also guiding the students in to the unknown. This will give the learner a firm grip of the practical and applied skills and the subject matter as much as possible. Hence the teacher should shoulder the responsibility of developing the potentials inherent in all the learners. According to Mac Greedy (1982) all learners are created creatively, but it are the teachers responsibilities to discover and nurture this great potentials inherent in them. The metalwork technology teacher therefore, is a crucial component of any educational system because no organized learning can take place without teachers.

The Goals of Metalwork Technology Education

The goals of technical education of which metalwork is among as stipulated in the National Policy on Education (NPE 2004) are:-

i. To cultivate inquiring, knowledge and rational mind for the conduct of a good life and democracy.
ii. To produce scientists for national development.
iii. To service studies in technology and the cause of technological development and
iv. To provide knowledge and understanding of the complexity of the physical world, the forms and the conduct of life.

In pursuance of these goals, the Federal Government stated that science technology and mathematics (STM) teachers should emphasized the teaching and learning of these processes, and principles at all levels of education. Special provision and incentives should be made for this study at each of the national education system. The government also stated that the study of STM should be popularized to enhance the production of adequate number technological personnel to inspire and support national goal.

Metalwork technology is an activity of making objects with substance that is opaque, fusible, ductile, good conductor of heat and electricity, for cations by loss of electrons and yields basic oxides and hydroxide.

According to Hornsby, (2001): metalwork is an activity of making objects out of metal in an artistic and skilful way. Technology in the other hand involves the methods and process what they eat, drink, wear, and provide shelter for themselves communicate with one another and a host of others. In the same vein technology according to Nwaokolo (2002). Is a systematic application of the knowledge of science to practical tasks in industry, the know-how of doing things. He further defined metal technology as an application of scientific way. It is the totality of all the process involved in the production of metal articles Nwaokolo (2002).

Technology education as an aspect of metalwork can be seen as an education to earn a living in an occupation in which success is dependent largely upon technical information and understanding of the laws of science and principles of technology as applied to modern designs production, distribution and services.

The Antecedents of Metalwork Technology

Metalwork trades are the various area of specialization in metalwork technology. Metalwork technology is the totality of all the process involved in the production of metal articles. The areas of metalwork technology are:

Fitting and machining of mechanical production which deals with the use of machine tools or hand tools to produce fabricated metal components and articles like funnels, water cans, containers for putting beverages and others welding, which is concerned with joining of two or more pieces of metal together with the aid of heat and welding rod; Foundry which deals with casting of metals into various shapes forging which is the process of heating metal pieces to a certain temperature and hammered to a required shapes.

Yusuf, (2001); observed that the beneficiaries of metalwork technology education pass through institutions without mastering the skills that will scale them through the labour market successfully. With the low level of skill acquisition there is great fear of failure that prevents an individual from venturing into unfamiliar grounds. Ezewu, (1992); also observed that the practical training given to metalwork technology students may not be sufficient for them to become self reliant, he claimed that what we are practicing now is for examination purpose to attain a certificate of

education. Consequently, many that have graduated can not defend their certificate, hence, there are many employees that can not face the challenges of the task, they were engaged to handle. A metalwork technology graduate can only become self employed if he is practically balanced with good entrepreneurial initiatives. The labour market has become saturated and metalwork technology graduates float the streets without government paid jobs majority of these graduates are without sufficient practical skills and entrepreneurial initiatives to make them established a workshop of their own. They carry faces that clearly spelt out frustration, dejection and hopelessness.

Akale, (2004); observed that the infusion of entrepreneurial education in NCE Technical curriculum is a reaction to the escalating incidence of graduates unemployment. The goal of entrepreneurial skills is to orient students towards self reliance. Metalwork training will be directed towards more practical oriented society with more entrepreneurship and practical computer training, the problems facing metalwork technology graduates will be minimized. Olaitan, (1992) also observed that instructional methods relevant to the teaching of metalwork are practical projects, discussions, excursion or trip and homework he further explained that lecture method might be used effectively, since the objectives is specifically to train personnel who will eventually be useful in the production line industry or set up their own business.

Problems Facing Technical Education

Although this form of education was given adequate recognition in the (NPE 1998). The policy provided a basis for its recognition and effective implementation. otherwise, the situation on ground does not only discourage technical education, but in addition frustrate those already in it. Because of the neglect of these forms of education for very long time and the inferiority complex associated with it in the past, students consider it the ultimate alternative. This can be supported as opined by Olagunju, (1994); who stated that my entrance into technical profession was not intentional, but rather as a result of frustration and inability to pursue the desired University Degree programme due to lack of academic requirements. Another problem identified is on inadequate metalwork technology educations, this problem need serious and urgent attention because technical educators are the main catalyst of education productivity. Oga, (2003); observed that in Nigeria the problem of inadequacy of metalwork technology educators and other related courses both in quality and quantity has been with us for decades. Most of the new metalwork technology educators available are of poor quality either because they have nor been trained well, less commitment to duty, frustrated on the job or because they have no facilities to work with. At present, professional teachers are insufficient in our institutions of learning and so, non professionals often referred to as “Quacks” find their way into teaching profession thus contributing in producing non-practicing metalwork technology education teachers.

Udo, (1977): opined that skills can not be taught by lecturing alone. This is because metalwork technology training is mostly concerned with doing things practically and therefore the most effective medium is that which presents the syllabus in the most practical useful way. This will enhance the development of practical skills leading to self-employment through exposure to the metalwork equipment. Lack of curriculum implementation. The prescribed curriculum may be analyzed as impressive and contain all the important skills to be acquired, however, implementation remains questionable. Technical education curriculum prescribed skills acquisition that can lead to self employment. The extent to which the prescribed curriculum has succeeded half way in attaining the needed technical skills. The attitudes of some metalwork students towards the skills content of the curriculum seem to be very poor for a long time. In addition, most of the students in metalwork technology education in Nigerian tertiary institutions are with less interest in manual skills as

contained in the curriculum, because of their envious attitudes towards their colleagues in liberal arts going about with long ties round their necks. Such attitudes can result to poor performance of students in their practical work.

Metalwork Technology and Self Reliance

The report of comparative Technical Education Seminar Abroad of 1966 recommended the following objectives for a National Plan of Vocational – Technical Education in the Republic of Nigeria.

i. To provide technological literacy to all pupils, that is to prepare every pupil for life in technological age.
ii. To help develop the right attitude towards work is and habits of mind conducive to the proper use of technology.
iii. To provide adequate technological orientation and preparation for advanced professional education and training in technology.
iv. To equip school leavers with skills to earn a living.
v. To stimulate and encourage creativity.
vi. To provide the awareness that technology does not only solve problems but create some as well.

Vocational and Technical Education are the basis elements of nation building and self – reliance improved our agriculture, health and expanded our trade, increased our knowledge and gainful employment, transportation and communication have reduced the whole world to a small village where one can not only communicate with neighbours but also see and interact with him technologically.

Development or independence can not exist without Vocational and Technical Education because it aid to the production of materials, the know-how and the labour for such development can lead to self-reliance.

Way Forward to Self–Reliance

Metalwork Technology is the totality of all the process involved in the production of metal articles. These areas include fitting and machining of mechanical production, which deals with the use of machine tools or hand tools to produced metal components, fabrication which deals with working with sheet metal to produce fabricated metal component and articles like funnels, water can containers for putting beverages and others, welding which is concerned with joining two or pieces of metal together with the aid of heat and welding rod, foundry which deals with casting of metals into various shapes, forging which is the process of heating metal pieces to certain temperature and hammered to required shape.

Self reliance metals workers are found in all of these facets of metalwork technology, they are scattered around everywhere in Nigeria. They produce metal articles and components of different size and shapes for these public to purchase e.g. of these are metal spoons, forks and knives to eat with which had been cooked in metal pots. We use vehicles motor cycles, trains or bicycles they are also made of metals. Electric light, radio, televisions and the likes are all made up of metal parts. Our constructions work both simple and complex each one of them has a steel enclosure, also our modern electrical gadgets are all made of metals.

Conclusion

The importance of practical acquisition in metalwork technology education for self reliance can not be overemphasized. The position of this paper therefore emphasized on the need to develop curricula which can guarantee the realization of the goals and objectives of vocational and technical education to meet the technical manpower needs of society. The students need to be adequately skilled in their various fields of specialization to meet the challenges of the future. With the appropriate skills acquired in the training institutions the students will be able to get involved in employment or self employed for economic self support after graduation.

Recommendations

Having realized the problems/shortcoming coupled practical skills acquisition in metalwork technology for self-reliance it is the opinion of the writer that such challenges can be resolved if the following recommendations are considered for proper implementations.

1. The curricula of Vocational and Technical Education should be reviewed from time to time to include what is left out of the University curricula.
2. Colleges of Education and Polytechnics should be up-graded to degree awarding institution for Vocational and Technical Education graduates climb to the apex of education in the country.
3. More clustered areas for metal workers in the country is highly needed. Government therefore should build metalwork complexes all over the country where metal workers of different trades will stay and carry out their activities and provision for recruitment should also be provided i.e. apprenticeship. This will encourage intra and inter skills acquisition and development among them this will enhance their productivity and increase their overall sales above all, be self reliant.
4. **Provision of Equipment and Tool:** Government should provide modern machines, equipment and tools in all these clustered of metalwork areas. This will enable them to be acquainted with the latest equipment machines and tools in different areas of specialization.
5. **Disbursement of Loans:** Government should encourage metal workers by disbursing different loans to graduates to enable them be self employed as this will help them also to procure modern machines.

Considering the above recommendations metalwork educator and practitioners and all other stakeholders will meet all their designed and programmed aims and objectives appropriately.

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